

FLASHLIGHT WITH LIGHT EMITTING DIODE
SOURCE

ABSTRACT OF THE DISCLOSURE

An apparatus for improving the performance of flashlights includes a substantially cylindrical housing (10) having a first end (12) and a second end (14). A battery cap (18) is operatively connected to the first end of the housing and functions to secure a series of batteries in place. A series (30) of light emitting diodes (LED) (32-48) are mounted within the flashlight housing at the end opposite the battery cap. The series of LEDs form an LED array which operates as the light source for the flashlight. A substantially cone-shaped optical assembly (50) extends outward from the second end of the housing and operates to focus and disperse the LED beam emitted by the LED array. The flashlight further includes an adjustable switch (56) disposed on the exterior of the housing. The switch is coupled to a variable resistor (58) which permits control over the light level and/or battery life. An electronic current regulator (70), enclosed by the housing, allows the LED beam to remain at a constant and desired light level, thereby increasing the efficiency of the battery life. A dynamic pulse control system (74) is coupled to the switch which takes advantage of the human eye perceiving the pulsed beam to be continuous. The pulse control also increases the peak current through the LED source.